

REMARKS

This is a response to the non-final Office Action dated January 12, 2005.

The specification is amended at page 17, lines 1-13 to correct an error in that the image 51 should be the corrected “comparison” image, not the corrected “reference” image, as explained at page 14, lines 3-6.

A new Abstract is provided which has no more than 150 words in accordance with 37 C.F.R. §1.72.

Claim 1 is amended to improve clarity. See page 4, lines 11-14 and 19-24. Additionally, the amendment corrects an inadvertent error in that “reference” image is mentioned instead of “comparison” image (see page 4, lines 19-24). The claim also clarifies that the section information of the object is of a section that is desired to be acquired, e.g., desired by the viewer (page 24, lines 17-21). Regarding “calculating” in place of “determining”, see pages 4-5, bridging sentence. The final sub-paragraph of claim 1 refers to the “coordinates” calculated rather than “values”.

Claim 4 is amended for consistency with claim 1.

Claims 7-13 are new. Claim 7 recites further details regarding the searching to locate the corresponding point in the corrected comparison image. In particular, a degree of correspondence of a number of candidate points is determined, and the candidate point with the highest degree of correspondence is selected as the corresponding point (page 23, line 4 to page 24, line 4).

Claim 8 explains the use of an epi-polar line to identify the candidate corresponding points (page 23, lines 4-11).

Claim 9 sets forth that a plurality of corresponding points in the corrected comparison image are located for a plurality of points of attention in the corrected reference image (page 24, lines 9-16).

Claim 10 refers to the role of a viewer input in defining the reference line and a reference segment by defining two points. Additionally, it is noted that the points of attention are limited to being on the reference segment. See points A and B, and reference segment 54, in Fig. 5; page 15, lines 7-11; and page 25, lines 8-12.

Claim 11 is analogous to claim 10 but does not state that the points of attention are on the reference segment.

Claim 12 is analogous to claim 10 but refers to the one point of attention of claim 1 as being on the reference segment.

Claim 13 is an independent claim that is based on claim 1. Regarding the use of the term “components” in place of “means”, see page 12, last paragraph.

Claims 1-6 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,469,254 to Konomura. Konomura provides a system for measuring the 3-D position of a pipe by extracting image information on the position of a cross-sectional figure and the position of a vanishing point, and using known information on the size of the pipe (Abstract).

In particular, as set forth in claim 1 of Konomura, a coordinate system relates a position on an image of the pipe, which has a uniform cross section, and a three-dimensional position on the pipe, by extracting a cross-sectional configuration of the pipe from a display image of the pipe, and a vanishing point corresponding to a darkest point in the displayed image.

A measuring coordinate system is determined by using the extracted information and known information regarding the pipe and the imaging device used to image the pipe. A 3-D

position on the pipe corresponding to an arbitrary position in the image displayed on the display screen can then be calculated.

Thus, the present invention differs from Konomura's system in various aspects. For example, Applicant's claim 1 sets forth that a corresponding point searching means is used for searching a corrected comparison image for a corresponding point that is associated with a point of attention on a cutting-plane reference line in a corrected reference image.

Furthermore, a section information arithmetic means is used to acquire section information concerning a section of an object of observation. This is achieved by calculating three coordinates, which represent a point in three-dimensional space whose mapping results in a corresponding point on a cutting-plane reference line. The calculation is made using the position of the point of attention in the corrected reference image and the position of the corresponding point in the corrected comparison image.

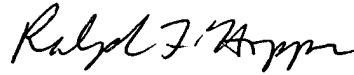
For example, referring to Applicant's Fig. 5, a reference line 53 is provided on a corrected reference image 50 of an object. Referring to Fig. 6, a cutting plane 56 is provided that passes through the reference line. Points A1 and A2 are points on the surface of the object (e.g., on section contour line 57 of the object) resulting from mapping points A and B, which are points of attention in the corrected reference image 50. See also page 16, lines 12-18. Fig. 15 illustrates corresponding points 59 in the corrected comparison image 51 that correspond to the points of attention along the line segment 54 between points A and B on reference line 53 in the corrected reference image 50. See page 24, lines 9-16.

Thus, Applicant's system allows the user to specify the position of a section of the object that is desired to be viewed. Any desired portion of the object can thus be swiftly specified and understood. See page 24, line 17 to page 25, line 7.

Withdrawal of the rejection is therefore respectfully requested.

Accordingly, Applicant respectfully submits that each of the present claims is in condition for immediate allowance, and such allowance is respectfully solicited. If the Examiner believes a telephone conference might expedite the allowance of this application, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,



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